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The Toad *Bufo marinus* (Linnæus) in Texas.

EDWARD H. TAYLOR and JOHN SUAREZ WRIGHT.

THE writers, while collecting along the highway between Zapata and Arroyo Loma Blanca, in southern Texas, on the night of August 20, 1931, encountered a number of toads in a temporary pool, which on examination proved to be the widespread *Bufo marinus* (Linn), the largest known species of *Bufo*.

The water in which they were found was in an elongate pool approximately 100 feet long and in no place more than three feet wide, and not more than one foot deep at any place. Most of the specimens were found seated in the edge of the water and at the approach of a light they would disappear in the water only to reappear shortly on the opposite bank. At this place twenty-two specimens were captured, among them several large females. No pairs were found in copulation and no males were heard calling. No eggs were observed.

Later in the night camp was made at Arroyo Loma Blanca, and here the males were heard calling. Nine more specimens were found in the pools of the arroyo, apparently all of them males.

In both localities there were large numbers of *Rana pipiens* Schreber, but no other amphibians were found save a single specimen of *Bufo debilis* Girard and one specimen of *Gastrophryne texensis* (Girard).

An examination of the stomach contents showed that they had been feeding on large tenebrionid and carabid beetles, the bulk of the food being of the genera *Eleodes* and *Pasimachus*. Remains of other insects were in such state as to be unidentifiable in a cursory examination.

None of the specimens taken reach the size of Brazilian specimens (22 cm.) as reported by Miranda-Ribero.¹

Description of species: No. 13101, Kansas University Museum, collected August 20, 1931, between Zapata and Arroyo Loma Blanca, southern Texas, by John Suarez Wright and Edward H. Taylor.

1. *Gymnobatrachios* (Anura) Brasileiros, *Archivos do Museu Nacional do Rio de Janeiro*, XXVII, 1926, p. 134.

Snout moderately long, somewhat rounded in profile; interorbital region strongly concave, gradually becoming shallower toward the snout; canthal ridges begin at a point above the nostrils and continue to anterior corner of eye, where they continue with the prominent supraorbital ridge, which continues in a circular course to the posterior corner of the eye, where it turns diagonally backward and continues to the parotoid; a postocular ridge is evident for a short distance anterior to the tympanum; a preorbital ridge is present and meets the supraorbital ridge at its junction with the canthal ridge; nostril about equidistant from the nearest edge of the lip and the anterior corner of the eye; the diameter of the eye is equal to its distance from the most anterior point of the snout; eyelids with a strongly defined free edge; tympanum oval, diagonally placed, separated from orbit by a distance equal to its shortest diameter; a strong, flattened, maxillary ridge, evident from a point under the anterior edge of the eye, continues back to the posterior edge of the jaw; loreal region somewhat concave; nostrils elongate, pierced diagonally; parotoids enormous, as long as the head, much longer than wide, diagonally placed, distinctly pitted; dorsal surface of body covered with rounded, flattened tubercles or pustules of varying sizes; a more or less regular paired series of pustules extending from the occiput to above anus; each of the pustules on the dorsal surface is surmounted by a spine which is so low as to be scarcely discernible save on the femur and tibia of the males, where they are distinct; to the touch the skin feels relatively smooth; the entire under surface of the body and limbs is granular in character, each granule with a slight spiny projection almost too low to be sensed by touch; eyelids strongly tubercular; an enlarged series of tubercles passes backwards from the posterior edge of the parotid gland.

Toes about half webbed, the fourth elongate with well-defined lateral flaps; inner metatarsal tubercle raised, oval, the anterior edge slightly free; outer metatarsal tubercle irregular in shape, high anteriorly, more flattened posteriorly; a sharp-edged skin-fold continues on the side of the foot behind the inner metatarsal tubercle, the inner margin of which extends forward as a small lobe; a small oval pollicary tubercle; prominent tubercles at the base of each finger, that of the first much the largest; entire surface of hands and feet covered with flattened tubercles of various sizes.

Color: Above, variegated brown with indefinite, lighter, irregularly placed blotches of light cream to dirty light-brown color; these spots distinctly lighter on the sides; ridges on the head a deep horn color; edge of lip, tips of tubercles, tips of toes deep black brown;

iris black with blue and gold flecks; belly and under side of limbs cream with the tip of each granule deep brown.

The only known toad in Texas with which the present species might be confused is *Bufo valliceps*, but the markings, the higher, sharper cranial ridges, the smaller parotoids, the higher, more pointed tubercles, and the smaller outer metatarsal tubercle of this species will readily distinguish it.

It will be seen that the above description differs in a few negligible points from other descriptions of this species. We do not find anything, however, to warrant a subspecific designation.

We are aware that this species has been artificially introduced into certain West Indian Islands; however, we do not believe that its presence in southern Texas must be accounted for in this way. It is probable that it ranges only a short distance north of the Rio Grande, but it will doubtless be found to range in suitable territory south of the river, connecting our territory with that now known to be occupied by the species in Mexico. It is an interesting addition to our known United States fauna.

The following table of measurements gives the variation that obtains in the series:

Table of Measurements of *Bufo marinus*.

K. U. Number.	Length.	Fore leg.	Hind leg.	Parotoid.		Diameter eye.	Diameter tympanum.
				Length.	Width.		
13101.....	168	84	184	47	31	18	11
13102.....	162	82	177	42	30	13	9
13103.....	147	78	174	38	29	12	8
13104.....	145	75	167	38	26	14	8
13105.....	136	69	170	38	21	13	7
13106.....	127	69	153	34	23	12	8
13107.....	126	70	147	35	24	12	7
13108.....	118	63	145	34	18	10	7
13109.....	114	64	153	36	18	8	7
13110.....	113	61	149	35	18	9	7
13111.....	108	63	130	28	30	11	7
13112.....	105	52	126	22	14	8	7
13113.....	104	50	128	24	15	7	6
13114.....	103	56	137	28	15	8.5	6
13115.....	99	51	114	22	11	7	6
13114.....	96	46	118	23	11	7	4.5
13115.....	94	54	117	22	12	7	6
13116.....	91	50	111	23	16	9	7
13117.....	89	47	117	22	12	7	6
13118.....	87	49	106	22	14	7	6
13119.....	83	45	107	22	10	6	4
13120.....	83	46	106	20	11	7	6
13121.....	78	44	97	20	12	6	6
13122.....	77	38	93	17	10	7.5	5.5
13123.....	77	39	104	18	13	7	6
13124.....	76	44	96	19	11	7	5.5
13125.....	76	38	98	18	10	6.5	4
13126.....	75	43	92	20	11	5.5	4.5
13127.....	70	39	93	18	10.5	7.5	5.5
13128.....	69	40	103	18	9	6	4
13129.....	66	36	87	16	11	5	4